

Good morning, Chairman Norton, Ranking Member Graves, and Members of the Subcommittee. My name is David Winstead and I am the Commissioner of the Public Buildings Service (PBS) in the U.S. General Services Administration (GSA). I am pleased to appear before you today to discuss how GSA is leading by example in greening our public buildings, particularly those right here in our nation's capitol. Today, I would like to talk about our successes in greening the new construction and modernization of our buildings, energy management, and green building operations. Specifically, I would like to describe the ambitious programs in the National Capital Region (NCR) and share with you a number of outstanding examples of their efforts. I will also discuss how we are helping other members of the Federal community in the Washington Metropolitan area in their greening initiatives, as well as describe the challenges of the newly enacted energy legislation, and finally, I will offer a few ideas that may assist the Subcommittee in further promoting green efforts in our public buildings.

GSA's "green" programs nationwide

The Federal government is the largest single consumer of energy in the United States. According to the Department of Energy, Federal buildings account for 37% of the government's energy usage, use as much as 1.5 percent of the Nation's electricity and emit about 2 percent of all U.S. building-related greenhouse gases. Since 1985, Federal agencies reduced their energy intensity in Federal buildings by 23 percent in 2005 (for standard buildings). Agencies cut their carbon emissions from facility energy use by 3.3 million metric tons in 2005 compared to 1990. At GSA, since 1985, we have cut our energy consumption by 30 percent and carbon emissions by 281 thousand metric tons (comparable to removing 210 thousand vehicles from the road in one year) in our public buildings. We are using green principles and leading by example in the efficient use of energy, water and materials, as well as promoting space that enhances productivity and the work environment.

Some of our achievements include:

- Installing over 500,000 sq. ft. of planted roofs, including one of the largest on the Eastern seaboard that saved the government over \$1 million in stormwater remediation
- Diverting over 106,000 tons of construction waste from landfills in 2006 saving an estimated \$6.3 million in tipping fees
- Procuring nearly one million megawatthours (mWhs) of renewable energy, including 100% wind energy for the Statue of Liberty and Ellis Island over the last four years
- Producing nearly 3.4 billion British Thermal Units (Btus) of renewable energy in 2006, which offset burning 162 tons of coal in our buildings. We recently installed one of the first photovoltaic arrays embedded in a roof membrane on a Federal building. This project is generating 300 kilowatts

- (kW) of electricity, supplies 50 percent of the building's electrical needs and will sell excess energy back to the grid.
- Earning the designation of Energy Star in 105 of our buildings as of 2006, the most of any Federal agency.

As the first Federal agency to join the U.S. Green Building Council (USGBC), GSA plays a major role in the advancement of green building practices. Since 2003, GSA has required all capital projects to use the USGBC Leadership in Energy and Environmental Design (LEED®) green building rating system as a design criterion with a goal of a Silver designation. GSA has the most LEED rated buildings of any government organization and uses LEED to measure our success. We currently have 75 projects registered for LEED certification. To date, GSA has earned LEED ratings in 25 buildings – 11 are GSA owned and 14 are GSA leased buildings. In a study of 19 of these buildings, we discovered the following:

- on average, LEED buildings are designed to perform over 32% better than a building designed to meet the ASHRAE/IESNA Standard 90.1 (American Society of Heating, Refrigeration and Air Conditioning Engineers/Illuminating Engineering Society of North America, Energy Standard for Buildings Except Low-Rise Residential Buildings);
- over 75% of the construction waste was recycled;
- these buildings reduced indoor water use by over 38 percent as compared to the baseline;
- they represent 33.7 million kW hours, or 33% of GSA's own green power purchases

In 2006, GSA appointed 15 of America's top experts in sustainable (green) design to its National Register of Peer Professionals to help select design teams and critique design concepts. All of our standards and guidance documents contain sustainable design requirements and expectations. For example, The Facilities Standards for the Public Buildings Service has integrated specific, and ever increasing, sustainability requirements since 2000. The latest revision places a new emphasis on integrated design and enhanced goals for sustainability and energy efficiency. Scopes of work for architectural/engineering services, commissioning, construction administration, and general contracting also contain new, measurable requirements related to sustainability.

As market awareness has grown, GSA has developed new green lease provisions and updated existing provisions to become standard lease requirements in 2007. As of today, GSA realty professionals have delivered 14 LEED certified projects - 7 LEED Gold, 6 LEED Silver and 1 LEED Certified.

GSA has a strong record of energy conservation

Between 2003 and 2007, GSA achieved an 8.2 percent reduction in energy consumption including credits for renewable purchases compared to the 1985 baseline. We operate our buildings at costs that are 1.6 percent below comparable buildings in the private sector, and we pay 10.3 percent less for utilities. Some of this reduction is directly attributable to the investments both Congress and GSA made in building modernizations as well as stand-alone energy conservation projects over the past 15 years. A considerable part of this reduction is the result of the concerted efforts of GSA property managers working closely with our customers.

In addition to those above, we have a number of programs nationwide that have been “greened,” including building operation and maintenance, cleaning and recycling. I would now like to describe how the NCR is implementing some of our most forward-thinking programs.

GSA’s “green” programs in the NCR

NCR manages about 26% of our total portfolio nationwide, or 93 million square feet comprised of 53 million square feet of leased space and 40 million of owned space. In both categories, the NCR has strived to incorporate green features as I will describe below.

New construction, modernization and repairs and alterations

Green Buildings

NCR has earned three LEED Gold ratings from the USGBC, one in owned space, two in leased space.

- The Suitland Federal Center in Suitland, Maryland (GSA-owned) (the new National Oceanic & Atmospheric Administration (NOAA) Satellite Operations Center received this designation in fall 2007).
- The two buildings at One and Two Potomac Yards in Arlington, Virginia (GSA-leased) housing the Environmental Protection Agency (EPA) received these designations in 2006.

Another example of NCR’s green building efforts is the development of the new Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) headquarters facility. It is located on a Brownfield site which had been previously used as a District of Columbia government public works yard containing the ruins of an abandoned railroad trestle. NCR demolished the trestle and remediated 79,000 tons of contaminated soil, which was sanitized for reuse as construction material. New green features include:

- Green roofs to cover the entrance pavilion, parking garage, and exercise facility;
- Narrow floor plates and the abundance of glass to bring natural light to all workspaces;

- Close proximity to a new Metro station to promote employee use of public transportation and to encourage redevelopment of the immediate area.

Our development of the new headquarters facility for the Food & Drug Administration (FDA) at the White Oak Federal Research Center in suburban Maryland is another outstanding example. When complete in 2012, pending continued Congressional funding, the campus will comprise three million square feet and will house more than 7,700 employees.

- Use of environmentally sustainable practices began with the demolition of existing buildings on site, garnering NCR's first "GSA Demolition Derby" award for construction waste management.
- Hazardous materials were abated and disposed of and contaminated soils were removed.
- Concrete, brick, and masonry units were crushed for re-use as backfill on-site.
- Sustainable new construction features include a 22,000 square foot green roof on the central shared use building, natural ventilation, solar shading, reduced water consumption, and use of recycled content in many of the building products.
- A Co-generation facility providing reliable, uninterrupted on-site electricity generation for the facilities currently occupied on campus.
 - Heat is recovered from the generating process to produce hot water and chilled water in absorption chillers, further increasing the thermal efficiency of the plant by 30 percent and significantly reducing pollution emissions.
 - Planned expansion of the system will support 100 percent power generation for the entire campus after the remaining build-out is complete, keeping the local utility from having to accommodate the 25 megawatt load that would otherwise be required.
 - Photovoltaic array is located on-site and produces 38 mWh annually.
 - Coupled with related upgrades to HVAC, controls for lighting and improvements in glazing, these measures together will save more than 37 million kW hours, \$1.4 million in energy costs, and \$2.1 million in operation and maintenance costs annually.

The cogeneration facility at White Oak is one of ten projects in the NCR where private sector capital is being leveraged through the Energy Savings Performance Contract (ESPC) or Utility Energy Savings Contract (UESC) programs. Another major project is at the NCR Heating Operation and Transmission District (HOTD). HOTD provides steam and chilled water utility service to government and quasi-government customers.

- Chilled Water: NCR completed the chilled water expansion/cogeneration project in December 2004. This \$69 million project installed eight chillers and a cogeneration system in the Central Plant that allowed HOTD to

- extend chilled water service to the Smithsonian Institution (this portion of the project was financed by the Smithsonian).
- Steam heat recovery: The cogeneration system allows HOTD to use its heat recovery steam generator to produce steam and electricity as a byproduct from waste. Any electricity produced that exceeds HOTD needs itself, is made available to the power grid and is credited to GSA's account from the local electricity company.

Building Commissioning Process

We also have procedures in place to monitor performance once a new building or a major modernization is complete. For all new construction and major modernization, NCR now includes a Building Commissioning Process. This commissioning plan and team are established during the project planning stage. The process extends through the design phase, where the design and construction management contracts are checked to make sure they sufficiently define the commissioning requirements, and construction documents adequately detail what is to be achieved and who is responsible. Oversight continues throughout the construction phase, including periodic performance testing. Finally, during the one-year warranty period following construction, periodic testing occurs again to make sure that performance specification are achieved. At the end of this process, a final commissioning report is prepared that will serve as the benchmark for future re-commissioning studies.

Green Roofs

NCR has also been a leader in the use of green roofs. Over the past two years, Four NCR buildings "came on-line" that feature expansive green roofs. These planted roofs can substantially reduce rainwater run-off during storms and provide significant insulation for the buildings:

- Census Bureau headquarters at Suitland Federal Center in suburban Maryland, 85,000 square feet of green roof
- NOAA Satellite Operations Center, also at the Suitland Federal Center, 110,000 square feet – the largest green roof on the East Coast.
- ATF, as described above, 55,000 square feet of green roof
- New headquarters for the Department of Transportation, 65,000 square feet.

Landscapes and Water Conservation

Building Green does not stop at the edge of our building or the rooftop – it extends into our landscapes. NCR designs and maintains more than 100 Federally owned landscape sites in the Washington DC metropolitan area. We utilize a variety of landscape materials to minimize our reliance on turf, which requires more chemicals, energy and water to maintain and we chose plant materials that can tolerate drought and are naturally pest resistant. We further reduce maintenance costs by choosing plant materials that do not require extensive trimming and shaping.

At our larger sites, NCR designs and installs high-efficiency irrigation systems. This allows water to be precisely targeted and delivered rather than broadly cast over the landscape. These systems also deliver water according to the predicted need, based on daily downloads of weather information. For sites that are prone to erosion, we add retaining walls and plant soil-binding types of groundcover to reduce runoff.

In October 2007, GSA received the very first “Rain Leader Award” from the Environmental Protection Agency (EPA) for an innovative low impact demonstration project in one of the EPA headquarters courtyards in the Federal Triangle. GSA and EPA developed this project in partnership to convert an area previously used as a construction project staging area into a beautifully landscaped garden. This is part of

our ongoing partnership with EPA to green their headquarters. Other initiatives include a rain garden, permeable pavers to absorb runoff, landscape furnishings made of recycled materials, natural soil supplements to maintain aeration, use of cisterns to supplement the irrigation water supply, and solar lighting.

Green Operations

GSA’s commitment to Green extends beyond our new construction, modernization, and repair and alteration activities. We seek to operate Green as well.

Regional Environmental Management Systems

Within our buildings, as a part of GSA’s national implementation of Environmental Management Systems (EMS), NCR is implementing a Regional EMS. This is an internal management program that seeks to better coordinate and integrate efforts for meeting our environmental (including energy and transportation), health, and safety goals with our day-to-day operations. In addition to the portfolio EMS, and in collaboration with our customers, NCR is pursuing joint pilot EMS programs at a GSA-owned facility and a GSA-leased facility. The pilots are being conducted at the FDA White Oak facility (owned) and a Department of State leased facility. In both instances, the partnerships with the occupant agencies focus on sharing information and resources; lessons learned about EMS implementation and management; and measurable goals affecting both our operations and our occupants’ operations.

Energy

For the 154 buildings where we pay the utility bills, NCR has instituted changes in operating procedures to promote energy conservation and management. These include:

- Monitoring energy consumption on a monthly basis
- Conducting tenant awareness programs
- Performing building audits and providing training
- Real Time Metering in 11 of our buildings. GSA has 25 more buildings scheduled for installation in FY 08 with funding available. GSA has a plan to install these meters in all government-owned buildings in the NCR by 2012.
 - Advanced metering allows us to manage our power consumption more strategically. It can also help us to buy power at better prices because we can predict our use patterns.
 - In FY 07 we reduced electric consumption in these buildings by 6.6% when compared with the FY 03 base year.
- Procuring 3% of our power from renewable resources.

In addition, in all of our buildings, we conduct energy awareness campaigns, issue seasonal bulletins to help our building managers prepare for the heating and cooling seasons, provide certified energy managers to advise our building managers on conservation techniques, and conduct annual updates of an energy curtailment plan.

Recycling

Over 100 Federal agencies from all three branches of government participate in NCR-procured recycling contracts. Our recycling contractors pick up paper, cardboard, cans and bottles from 120 buildings housing more than 110,000 employees. In FY07, 8,000 tons of materials were collected and sold, generating a sales income of \$355,000. Diverting this waste from the landfill also saved an estimated \$1.2 million on landfill disposal fees, 25,600 cubic yards of landfill, 133,000 trees, 3 million gallons of oil, 32 million kW of energy, and 56 million gallons of water.

Landscape maintenance

Landscape maintenance practices in the NCR have become greener as well. For example, NCR composts all of its yard waste – composting 330 tons alone in FY 07. NCR also uses 100% organic pelletized poultry manure as fertilizer for turf and ornamental beds. This manure is obtained from poultry farms in the Chesapeake Bay watershed, thereby further reducing polluted runoff into that threatened body of water. During this year's annual application, NCR used about 80 tons of this innovative fertilizer.

NCR has reduced its pesticide use on landscapes by 89% since 1995, from 33,000 gallons to 3,700 gallons per year. NCR has an established integrated pest management program in place, and NCR was the first GSA region in the country to ban the use of 2,4-D herbicides and organophosphate insecticides.

GSA assists other agencies in the Washington Metropolitan area to green their facilities

Through our knowledge and expertise, and the contracts we have in place, GSA-NCR also assists other Federal agencies, who may not be housed in our space, in their greening efforts.

- As mentioned above, over 100 Federal agencies from all three branches of government use our NCR-procured recycling sales contracts.
- NCR increased the capacity and efficiency of the Main Steam Plant and was able to extend service to the Smithsonian Institution and helped avert the construction of another steam facility under the Mall.
- In the greater Baltimore-Washington area, GSA procured approximately 33.6 million kW hours of renewable energy on behalf of other agencies
- Both the Public Buildings Service and the Federal Acquisition Service in NCR provide goods and services that are key to the federal green purchasing program. This includes: recycled content products, environmentally preferable products and services, biobased products, energy- and water-efficient products, alternate fuel vehicles, products using renewable energy, and alternatives to hazardous or toxic chemicals.

On a national scale, since the issuance of the Executive Order 13423 in January of last year, GSA has formally agreed with three agencies to aid them specifically in meeting their environmental targets. In every transaction, we apply our internal standards for energy conservation, energy efficiency and sustainable design. We have revised our standard solicitation for offers for leasing to incorporate sustainable and energy conserving clauses. We are establishing and staffing the Office of Federal High-Performance Green Buildings, newly created by the Energy Independence and Security Act (EISA) of 2007. We continue our active participation in the Inter-Agency Energy Management Task Force and the Inter-Agency Sustainability Working Group—both of which focus keenly on how agencies can achieve the goals of the new Executive Order and the newly enacted EISA 2007.

Challenges of the new EISA (2007)

The EISA 2007, set challenging goals for the Federal government, and for GSA. For the first time, it requires GSA to reduce consumption of fossil fuel-generated energy in new buildings and major renovations. For new designs, our target is to be 55% below comparable commercial buildings, which may be difficult to achieve using today's technology. Much more difficult is the goal of using 100 percent non-fossil fuel generated energy by 2030 in new buildings. We are working with a broad and diverse group of organizations both inside and outside the Federal community. This includes the Department of Energy (DOE), EPA, the Department of Defense, ASHRAE, the American Institute of Architects (AIA),

the Alliance to Save Energy, the Commercial Buildings Initiative, Congress, and others—to explore both technology and techniques for achieving the goals in a cost effective way.

Further support for GSA's greening efforts

GSA is a national leader in the purchase and use of renewable power from utility companies. In 2006, 4.5 percent of our electricity was generated from renewable sources or bought through renewable energy certificates, compared with the national average of 2.3 percent. If given the authority to extend our utility contracts from 10 to 20 years, in the proposed General Services Enhancement Act, we could achieve even more. Currently, GSA may enter into contracts for public utility services for ten years. However, renewable power plant developers often need an energy purchase contract of up to twenty years in order to finance and develop increased capacity. Without the authority to contract for energy from renewable energy providers for more than ten years, GSA is unable to benefit from the relatively inexpensive energy they would generate and unable to use the government's purchasing power to spur new renewable energy production. Our proposal currently before Congress would continue to allow GSA to enter into contract for public utility services for periods not more than 10 years, but the provision would also allow GSA to enter into contracts for renewable energy utility services for periods up to 20 years.

Conclusion

At GSA, we are leading by example in the areas of green building design, construction, and alterations; we have a well-established energy program, and numerous other programs in place that promote the efficient, green management and operation of our facilities. And we have a number of outstanding examples of our efforts right here in the Nation's Capital.

Thank you for the opportunity to talk about GSA's leadership role in this area. I look forward to working with the Subcommittee on this matter of vital interest to our country.